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PROCEEDINGS OF SOCIETIES.

Natural History Society, Montreal. — February 28th. A paper on the Nipigon or copper-bearing rocks of Lake Superior, with notes on copper mining in that region, was read by Mr. J. W. Spencer.

Principal Dawson called the attention of the members present to an interesting collection of ferns and other fossil plants which had been recently obtained by Mr. Albert J. Hill from near Sydney, Cape Breton, some of which were exhibited. He said that they were of interest as showing the occurrence of forms hitherto known only in the middle and upper coal formations, in beds assigned, on stratigraphical evidence, to the upper part of the Millstone-Grit. They were also of interest from the presence of at least four species of ferns showing fructification, which would shortly be described. They were further of interest as occurring in the same beds with the remains of a fossil larva of a dragon-fly, which will be described by Mr. Scudder in the next number of the *Canadian Naturalist*, and which is the first insect of that family found in the Carboniferous rocks.

Academy of Sciences, St. Louis. — March 6th. Professor Conant, who had lately visited Southwest Missouri and examined certain curious mounds there, situated some miles from New Madrid, gave a brief account of his trip. One curious discovery made was that while the skulls taken from the centre of these mounds were the true mound-builder skulls, two were found in the edge of one of the mounds that belonged to a very different race. The exceedingly low, retreating forehead indicated a much lower grade of organism, yet the remains had been buried after the mound-builder fashion, with a jug on each side of the head.

March 20th. Professor Potter reported that Dr. G. I. Engelmann and himself had visited the New Madrid mound region, and opened four mounds, securing ten or twelve skulls and about one hundred specimens of pottery.

G. C. Broadhead read a paper on the Porphyritic Rocks of Southeastern Missouri, presenting evidence that these rocks are Huronian.

A. J. Conant read a paper on the Mounds of New Madrid. The burial-mound examined by him was found within an inclosure of about fifty acres, which is surrounded by earthen walls. Probably a thousand skeletons have been already found. Three pieces of pottery are usually found with each skeleton. Some vessels were more than a foot in diameter, with walls so thin that they could not have been safely moved when filled with water. It was observed that some skeletons were in a much better state of preservation than others. In some cases the outline of the skull was shown only by a thin white line; in others the usual pieces of pottery were found, but all traces of the skeleton had disappeared. Mr. Conant thought this an evidence that the mounds had long been a place of burial.

Dr. Engelmann remarked that the preservation of bones depends upon humidity and the character of the soil. Many bones undoubtedly older than the bones of these mound-builders are found in a state of good preservation.

Dr. Engelmann made a communication on North American Oaks. The genus *Quercus* is more extensively developed in America than in any other part of the world. In the Carolinas, oaks grow as small shrubs. The leaves of different oaks show great variation, some resembling the leaves of the willow, others those of the holly, etc., but the fruit is very much the same in all. The typical and probably the primitive oak of the tertiary had an acorn and a lobed leaf. An oak found in California has flower and leaves like a chestnut, but bears acorns like an oak. The cup of the acorn, however, is spiny like the burr of the chestnut. Dr. Engelmann remarked that this oak may be a hybrid produced between the chestnut and the oak in bygone times when these genera were less differentiated, as it is well known that even now hybrid oaks will propagate when removed from the "struggle for existence" against more hardy rivals.

ACADEMY OF SCIENCES, New York. — March 13th. The following papers were read: Further Researches on Phosphide of Silver, by Wm. Falke; A new Test for Boracic Acid, and other Qualitative Reactions, by M. W. Iles; Comparison of the Milk of the African Race with that of the Caucasian, by Henry A. Mott, Jr.; Milk and the Lactometer, by Elwyn Waller.

Geological Section. March 20th. Mr. S. W. Ford presented an account of the discovery of additional species of fossils in the primordial rocks of Lansingburgh, N. Y., and of plant-remains in the primordial slates at Troy, and described a new species of *Microdiscus* from the latter locality, for which he has proposed the name, *M. Meeki.* He also exhibited specimens of the hitherto imperfectly known pygidium of *Conocephalites* (*Atops*) *trilineatus*, from Lansingburgh. In conclusion he made some remarks upon the probable stratigraphical horizon of the Troy beds among primordial rocks, stating that the fauna of these beds, while entirely distinct in its species from that of the Acadian or Menevian group on the one hand, and from that of the ordinary Potsdam on the other, yet shows a decided leaning, in its genera, toward the former of these groups.

The president, Prof. J. S. Newberry, gave a *résumé* of his observations on the geology of the oil regions of the United States, — all of which he had visited, — and the results of his study of the facts which seem to illustrate the genesis of petroleum.

Very briefly stated, his theory of the origin of petroleum is that it is one of the evolved products of a spontaneous decomposition of organic tissue, chiefly vegetable, which begins as soon as life ceases, and ends only with the oxidation of all the contained carbon and hydrogen. When exposed in moist air vegetable tissue rapidly oxidizes in *decay;* when buried under water or in earth the process is retarded, and the constituents react on each other, forming carbonic acid, carbonic oxide, water, carburetted hydrogen, petroleum, etc., which escape, leaving peat, lignite, coal, anthracite, and graphite as residues in different stages of this progressive change. Petroleum and marsh gas are constantly escaping from all considerable carbonaceous strata, and especially from bituminous shale, beds of which underlie all our productive oil regions, and are the sources of the oil and of the gas with which it is always associated.

The carbonaceous shales of the Lower Silurian system supply the petroleum of Burkesville, Kentucky, and Collingwood and probably Enniskillen, Canada. The petroleum of Western Pennsylvania is derived from the Devonian black shales ("Cadent" of Pennsylvania, "Huron" of Ohio), which have a thickness of several hundred feet, and underlie all the oil region. When escaping from them the oil and gas rise into a series of overlying sandstones and conglomerates, which serve as reservoirs, and are confined there by sheets of nearly impervious clay shale

The oil wells of West Virginia are bored in the coal measures, but in a much disturbed region, and the oil probably comes from the Huron shale. The oil of Mecca and Grafton, Ohio, is Lower Carboniferous. It is found in the Berea grit, but originates in a black shale (Cleveland shale) which underlies it.

PHILOSOPHICAL SOCIETY OF WASHINGTON. — March 11th. Dr. Woodward continued his observations on *Frustularia Saxonica,* showing, by means of illustrations thrown upon a screen, the misapprehensions into which some continental microscopists had been led by mistaking for this species another diatom, *Navicula rhomboides.*

March 25th. Mr. Gilbert gave an account of lake formations, showing the various means by which lakes are produced, and, among others, one which had frequently been in his opinion mistaken for glacial action.

In cliffs of which the upper portion is subject to easy vertical cleavage, large masses are frequently detached, falling into adjacent valleys, damming up streams and forming lakes in this way with a mass of detritus which had been, or was liable to be, mistaken for the material deposited by a terminal moraine. These views were corroborated by Major Powell, who mentioned several instances of such lake formations.

Professor Mason then addressed the society on an international system of archæological symbols.

ACADEMY OF NATURAL SCIENCES, Philadelphia. — March 14th. Mr. Meehan spoke of the mode of propagation of the Florida moss or Tillandsia. Since he had before spoken on the subject he had had opportunities of observing that where the seeds germinate they do so on the under side of the branches, and where the bark is smooth rather than rough, thus indicating the presence of some adhesive matter on the seed.

Professor Cope called attention to a cetacean which he had observed and described ten years ago. He had recently had an opportunity of examining an entire skeleton. It belongs to the black fish, but differs specifically from its nearest ally, and seems to be almost intermediate between the genera *Globiocephalus* and *Grampus*. The anatomical characters separating these were given, and the name *Globiocephalus brachypterus* was proposed for the species.

Professor Frazer spoke of a peculiar trap from York County. Dr. Koenig, having been engaged upon the investigation of the minerals occurring at Magnet Cove, Arkansas, gave a preliminary notice of some of his results.

Mr. B. Waterhouse Hawkins, having stated that he was at present employed in rebuilding the skeleton of Hadrosaurus in the museum, reviewed the subject of the position of the so-called clavicles, referring specially to the opinions of Professors Leidy, Huxley, and Cope. He reminded the members that in 1868, when studying the remains contained in the museum, he had adopted the opinion first advanced by Dr. Leidy, and assigned the bones in question to the pelvic arch. Professor Cope, in 1867, had published his opinion that they were pubes, but had afterwards assigned them to the position of ischia, thus indorsing the view advanced by Professor Huxley. Mr. Hawkins had already on at least one occasion demonstrated before the Academy that this opinion of Cope and Huxley was not supported by the necessities of the creature's organization, and had advanced the opinion in 1875, and previously, that the bones in question were really pubes, having the long section so placed as to support the abdominal walls, as in the crocodile and marsupials. Attention was called to the fact that corresponding bones had recently been placed by Owen in his description of Omosaurus as pubes, thus establishing the correctness of the position taken by Mr. Hawkins, with regard to them in Hadrosaurus, as far back as 1868, and steadily adhered to by him in spite of the authority of the eminent naturalists who up to the present time held a contrary opinion. Professor Cope complimented Mr. Hawkins on the results established by Owen's description of Omosaurus, and further referred to the position of the bones under consideration.

A paper was presented for publication entitled On Pachnolite and Thomsenolite, by George Augustus Koenig, M. D.

TROY SCIENTIFIC ASSOCIATION. — March 6th. Microscopical section. The fructification of Algæ was discussed, and illustrated by slides contributed by the members. Dr. J. J. Woodward's photographs of the spurious lines of *Frustulia Saxonica* were presented by Dr. R. H. Ward.

March 20th. General meeting. Rev. A. B. Hervey delivered an address on the classification of sea-weeds.

BOSTON SOCIETY OF NATURAL HISTORY. — March 1st. Mr. Alexander Agassiz remarked on the affinities of starfishes, and Dr. Hagen read a paper on The Danger from White Ants to New England.

Appalachian Mountain Club, Boston. — March 8th. Papers were read on the following subjects: The Atlantic System of Mountains, by Prof. C. H. Hitchcock. Illustrated by a new Model of the White Mountains. A Day on Tripyramid, by Prof. Charles E. Fay. Two New Forms of Mountain Barometer, by Mr. A. B. Emmons. Exhibition of Mountain Profiles, by Mr. G. F. Morse.

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SCIENTIFIC SERIALS.[1]

Annals and Magazine of Natural History. — February. On Mr. Carter's Objections to Eozoön, by J. W. Dawson. Dr. R. Willemoes-Suhm on the Development of *Lepas fascicularis* and the "Archizoëa" of Cirripedia, and on the Development of some Pelagic Decapods. March. On the Polytremata (Foraminifera), especially with Reference to their Mythical Hybrid Nature, by H. J. Carter. On the Budding of the Cuninæ in the Stomach of the *Geryonidæ*, by B. Uljanin. Evidence of a Carnivorous Reptile about the Size of a Lion, by R. Owen. On the Relations of *Artemia salina* and *Artemia Mühlhausenii*, and on the genus *Branchipus* by M. W. J. Schmankewitsch.

Zeitschrift für wissenschaftlich Zoölogie. — December 22, 1875. On the Structure and Development of *Sycandra raphanus*, by F. E. Schultze. On the Sexual Organs of *Branchipus Grubii*, by H. Nitsche. On the Transformation of the Mexican Axolotl into an Amblystoma, by A. Weismann. On the Systematic Position of *Vortex Lemani*, by L. Graff. Contribution to the Knowledge of the Bryozoa, by H. Nitsche. January 17, 1876. The Developmental History of *Proteus anguineus*, by F. E. Schultze. Notes on the Developmental History of the Najadæ, by W. Flemming. On the Anatomy of Crinoids, by H. Ludwig.

Petermann's geographischer Mittheilungen. — December 15, 1875. The Mongols and the Land of the Tanguts. Steamer-Communication between Brazil and Columbia, by R. Reyes. On the History of Discovery of the Western Coast of Australia. Stanley's Researches on the Victoria Nyanza (continuation).

Psyche. — February. Odoriferous Glands in Phasmidæ, by S. H. Scudder.

Globus. — Nos. 6–9 contain Rebatel and Tirant's Journey in Tunis (with excellent illustrations).

The Geographical Magazine. — March. Cameron's Route from Lake Tanganyika to the West Coast of Africa, by E. G. Ravenstein. The Irrigation of Firozpur, by C. R. Markham. The World's Future Coal Depot, by D. Ker. The Voyage of the Challenger, by J. G. Davis. April. The Russian Campaign in Khokand, by A. Vambery. Peru,

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[1] The articles enumerated under this head will be for the most part selected.